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10/509,267

10/27/2004

Ryoto Shima

TSL 1786 US

5304

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08/26/2008

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EXAMINER

NGUYEN, KHANH TUAN

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

08/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/509,267 | Applicant(s) SHIMA ET AL. | |
| | Examiner KHANH T. NGUYEN | Art Unit 1796 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 07/14/2008 is entered and acknowledged by the Examiner. Claims 1 and 3-26 are currently pending in the instant application. Claim 2 have been canceled.

Withdrawn Rejection(s)

2. The rejection of claims 1 and 3-26 under 35 U.S.C. 103(a) as being unpatentable over either lino (U.S. Pat. 6,309,563) or Nakano et al. (U.S. Pat. 5,229,037) in view of Hamachi et al. (U.S. Pat. 5,840,831) is withdrawn in light of Applicant's amendment and remarks..

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1 and 3-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. (U.S. Pat. 5,229,037 hereinafter, "Nakano").

With respect to claims 1, 3-9, and 11-19, Nakano teaches at column 2 lines 33-68 an electroconductive silicone rubber composition comprising of (a) 100 parts by weight of a diorganopolysiloxane having two kinds or more different hydrocarbons groups per molecule (Col. 3, lines 19-51) and alkenyl groups bonded to the silicon atoms with at least two hydrogen atoms directly bonded to the silicone atoms in the molecule (Col. 5, lines 1-6); (b) 5 to 100 parts by weight of a spherical cured silicone elastomer particle wherein the said silicone elastomer particle is contains a surface active agent to provide mechanical strength (Col. 3, line 52 to Col. 4, line 38); (c) 100 to 1200 parts by weight of electrically conductive agent, e.g. powder and fibers of nickel, copper, silver and gold, to impart electroconductivity (Col. 4, lines 40-60), (d) a curing agent such as platinum based catalyst (Col. 5, lines 1-14); and optionally (e) up to 20 parts by weight of a liquid organosilicone compound that acting as a reaction inhibitor to prevent curing of the composition and cracking of the organopolysiloxane molecules due to the addition of electrically conductive agent (Col. 5, lines 15-29). Nakano further teaches the said conductive silicone rubber composition may be molded to a shape by compression molding, transfer molding, extrusion molding, injection molding and calendaring (Col. 6, lines 36-43).

As stated above, Nakano teaches a spherical cured silicone elastomer particle wherein the said silicone elastomer particle is contains a surface active agent (Col. 3, line 52 to Col. 4, line 28). However, Nakano failed to teach the content of said surface active agent in an amount of greater than 0 but not more than 0.3 wt. %.

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It would have been obvious to one of ordinary skill in the art at the time of the invention was made to formulate an electroconductive silicone rubber composition containing silicone elastomer particle having a content of surface active agent within the claimed range, since the general conditions of a claim are suggested by Nakano and discovering the optimum or workable ranges (i.e. greater than 0 but not more than 0.3 wt. %) involves only routine skill in the art.

5. Claims 1 and 3-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano (U.S. Pat. 5,229,037) as applied to the claims above, and further in view of Miyatake et al. (U.S. Pat. 6,339,127 hereinafter, "Miyatake").

In the alternative that Nakano disclosure alone is insufficient to establish a *prima facie* case of obviousness to the above listed claims. Nakano is relied set forth above. Nakano failed to teach a spherical silicone elastomer having a content of surface active agent in an amount of greater than 0 but not more than 0.3 wt. %.

In an analogous art of molding material, Miyatake teaches a silicone rubber powder is used as an impacted modifier, slipping agent, water repellent, processing aid in molding materials and flame retardant (Col. 1, lines 5-15 and Col. 18, lines 1-4). The said silicone rubber powder comprises of 0.001 to 7.95 parts by weight of emulsifier, i.e. surface active agent, per 100 parts by weight of silicone-forming component (Col. 10, lines 36-55). That is 0.001 to 7.95 wt. % of surface active agent in the silicone rubber powder composition. Miyatake also teaches the silicone rubber powder may be used in an amount of 0.1 to 100 parts by weight per 100 parts by weight of thermoplastic resin

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(Col. 18, lines 23-25). The thermoplastic resin composition may be molded by injection molding, extrusion, blow molding and calendaring (Col. 18, lines 61-64) to obtain a molded article having excellent impact resistance, slipping property and flame resistance (Col. 18, lines 65-67).

Therefore, it would have been obvious to the skilled artisan at the time the invention was made to have to modify the silicone elastomer particle of Nakano to contain 0.001 to 7.95 wt. % of surface active agent in order to provide excellent impact resistance, slipping property and flame resistance to a molding composition as suggested by Miyatake. Miyatake teach a surface active agent range which overlaps the claimed ranges (i.e. greater than 0 but not more than 0.3 wt. %), thus a *prime facie* case of obviousness exists when the claimed range of a claimed composition overlaps the ranges disclosed in the prior art. See *in re malagari*, 499F.2d 1297, 1303, 182 USPQ 549, 533 (CCPA 1974); *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff* 919 F.2d 1575, 16USPQZd 1934 (Fed. Cir. 1990). See MPEP 213 1.03 and MPEP 2144.051.

6. Claims 1 and 3-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enami et al. (U.S. Pat. 6,380,301 B1 hereinafter, "Enami") in view of Nakano (U.S. Pat. 5,229,037).

With respect to claims 1, 3-9, and 11-19, Enami teaches a thermally conductive silicone rubber composition having excellent handling properties and moldability (Col. 11, lines 28-33). The said composition comprising of (A) a curable organopolysiloxane

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having at least two alkenyl groups in one molecule (Col. 3, line 58 to Col. 4, line 10) and silicon bonded hydrogen atoms in an amount of 0.1 mol to 1.5 mol per 1 mol of silicone-bonded alkenyl groups in component (A) (Col. 6, lines 5-16); 0.01 ppm to 1,000 ppm of (B) a platinum catalyst curing agent (Col. 6, lines 17-33); and 500 to 2,500 parts by weight of (C) a thermally conductive filler (e.g. Al powder, Cu powder, Ni powder and other metal powders) per 100 parts by weight of component (A) (Col. 7, lines 60-62 and Col. 8, lines 22-30). Enami teaches the said conductive silicone rubber composition may further comprise of other fillers and reaction inhibitors (Col. 11, lines 1-11).

The difference between Enami disclosure and the instant claimed invention is that Enami o failed to teach the said composition containing a spherical silicone rubber particle with a surface active agent in an amount greater than 0 but not more than 0.3 wt. %.

In an analogous art, Nakano discloses an electroconductive silicone rubber composition comprising of 5 to 100 parts by weight of a spherical cured silicone elastomer particle (component (B)) wherein the said silicone elastomer particle is contains a surface active agent. Nakano discloses the addition of spherical silicone elastomer particle to improve the molding workability of the silicone rubber composition and provide the cured silicone rubber body with good rubbery elasticity with low hardness and may exhibit a very low permanent compression set. (Col. 3, line 52 to Col. 4, line 28).

Nakano does not explicitly suggest the content of the surface active agent in the spherical cured silicone elastomer particle to be greater than 0 but not more than 0.3 wt. %.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have incorporated the spherical silicone elastomer particle of Nakano into the thermally conductive silicone rubber composition of Enami in order improve the molding workability of the silicone rubber composition and provide the cured silicone rubber body with good rubbery elasticity with low hardness and may exhibit a very low permanent compression set as suggested by Nakano.

It would have also been obvious to one of ordinary skill in the art at the time of the invention was made to modify the silicone elastomer particle of Nakano to have a content of surface active agent within the claimed range, since the general conditions of a claim are suggested by Nakano and discovering the optimum or workable ranges (i.e. greater than 0 but not more than 0.3 wt. %) involves only routine skill in the art.

7. Claims 1 and 3-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enami (U.S. Pat. 6,380,301 B1 hereinafter, "Enami") in view of Nakano (U.S. Pat. 5,229,037) as applied to the claims above, and further in view of Miyatake et al. (U.S. Pat. 6,339,127 hereinafter, "Miyatake").

In the alternative that Enami and Nakano disclosure alone is insufficient to establish a *prima facie* case of obviousness to the above listed claims. Enami and Nakano are relied set forth above. With respect to claims 1, 3-9, and 11-19, Enami and

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Nakano failed to teach a spherical silicone elastomer having a content of surface active agent in an amount of greater than 0 but not more than 0.3 wt. %.

In an analogous art of molding material, Miyatake teaches a silicone rubber powder is used as an impacted modifier, slipping agent, water repellent, processing aid in molding materials and flame retardant (Col. 1, lines 5-15 and Col. 18, lines 1-4). The said silicone rubber powder comprises of 0.001 to 7.95 parts by weight of emulsifier, i.e. surface active agent, per 100 parts by weight of silicone-forming component (Col. 10, lines 36-55). That is 0.001 to 7.95 wt. % of surface active agent in the silicone rubber powder composition. Miyatake also teaches the silicone rubber powder may be used in an amount of 0.1 to 100 parts by weight per 100 parts by weight of thermoplastic resin (Col. 18, lines 23-25). The thermoplastic resin composition may be molded by injection molding, extrusion, blow molding and calendaring (Col. 18, lines 61-64) to obtain a molded article having excellent impact resistance, slipping property and flame resistance (Col. 18, lines 65-67).

Therefore, it would have been obvious to the skilled artisan at the time the invention was made to have to modify the silicone elastomer particle of Nakano to contain 0.001 to 7.95 wt. % of surface active agent in order to provide excellent impact resistance, slipping property and flame resistance to the molding composition of Enami in view of Nakano as suggested by Miyatake. Miyatake teach a surface active agent range which overlaps the claimed ranges (i.e. greater than 0 but not more than 0.3 wt. %), thus a *prime facie* case of obviousness exists when the claimed range of a claimed composition overlaps the ranges disclosed in the prior art. See *in re malagari*, 499F.2d

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1297, 1303, 182 USPQ 549, 533 (CCPA 1974); *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976; *In re Woodruff* 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP 213 1.03 and MPEP 2144.051.

8. Claims 10 and 20-26 recites the phrase "a product prepared by" which is deemed as a product by process claim. A product by process claim does not depend on its method of production (i.e. curing) and where the examiner has found a similar product, the burden rests with the applicant to prove that that product is patentably distinct. See *In re Thorpe*, 227 USPQ 964 (CAFC 1985); *In re Marosi et al*, 218 USPQ 289; *In re Pilkington*, 162 USPQ 145.

Response to Arguments

9. Applicant's arguments with respect to claims 1 and 3-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHANH T. NGUYEN whose telephone number is (571)272-8082. The examiner can normally be reached on Monday-Friday 8:00-5:00 EST PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KTN/
08/19/2008

/DOUGLAS MC GINTY/
Primary Examiner, Art Unit 1796